

WHAT IS CLAIMED IS:

CLAIMS

1. A method of protecting a protected link including:
connecting traffic from a service module to a first physical module having a link
5 layer framer that is connected to a protected egress link,
connecting the traffic through the first physical module through a pooling switch
to a second physical module that is connected to an alternate egress link.
2. A method of protecting a protected link as in claim 1 wherein the first physical
module contains an optical link interface module.
- 10 3. A method of protecting a protected link as in claim 1 wherein the second physical
module contains an optical link interface module.
4. A method of protecting a protected link as in claim 1 wherein the first physical
module contains an electrical link interface module.
5. A method of protecting a protected link as in claim 1 wherein the second physical
15 module contains an electrical link interface module.
6. A method of protecting a protected link as in claim 1 wherein the first physical
module contains a module that places the traffic in proper form for a pooling switch.
7. A method of protecting a protected link as in claim 1 wherein the second physical
module contains a module that places the traffic in proper form for a pooling switch.
- 20 8. A method of protecting a protected link as in claim 1 wherein the traffic through
the protected egress link and the protecting egress link have a synchronization difference
smaller than 50ms.

9. A method of protecting a protected link as in claim 1 wherein the traffic through the protected egress link and the protecting egress link behave in a manner to the user as if there is no synchronization difference between the two traffic flows.
10. A method of protecting a protected link as in claim 1 wherein the pooling switch
5 enables multiple logical streams to be included in one physical interface.
11. A method of protecting a protected link as in claim 1 wherein the pooling switch is a packet switch.
12. A method of protecting a protected link as in claim 1 wherein pooling switch is a time division multiplexing switch.
- 10 13. A method of protecting a protected link including:
connecting traffic from a service module to a first physical module having a link layer framer that is connected to a protected ingress link,
connecting the traffic through the first physical module through a pooling switch to a second physical module that is connected to an alternate ingress link.
- 15 14. A method of protecting a protected link as in claim 13 wherein the service module decides from information within the input traffic stream where to output the traffic stream.
15. A method of protecting a protected link as in claim 13 wherein the first physical module contains an optical link interface module.
- 20 16. A method of protecting a protected link as in claim 13 wherein the second physical module contains an optical link interface module.
17. A method of protecting a protected link as in claim 13 wherein the first physical module contains an electrical link interface module.

18. A method of protecting a protected link as in claim 13 wherein the second physical module contains an electrical link interface module.
19. A method of protecting a protected link as in claim 13 wherein the first physical module contains a module that places the traffic in proper form for a pooling switch.
- 5 20. A method of protecting a protected link as in claim 13 wherein the second physical module contains a module that places the traffic in proper form for a pooling switch.
21. A method of protecting a protected link as in claim 13 wherein the traffic through the protected ingress link and the protecting ingress link have a synchronization
- 10 difference smaller than 50ms.
22. A method of protecting a protected link as in claim 13 wherein the traffic through the protected ingress link and the protecting ingress link behave in a manner to the user as if there is no synchronization difference between the two traffic flows.
23. A method of protecting a protected link as in claim 13 wherein the pooling switch
- 15 enables multiple logical streams to be included in one physical interface.
24. A method of protecting a protected link as in claim 13 wherein the pooling switch is a packet switch.
25. A method of protecting a protected link as in claim 13 wherein pooling switch is a time division multiplexing switch.
- 20 26. A method of protecting a protected link including:
connecting traffic from a service module to a first pooling switch,
connecting the first pooling switch to a first physical module having a link layer framer that is connected to the protected egress link,

connecting the traffic through the first physical module through a second pooling switch to a second physical module that is connected to an alternate egress link.

27. A method of protecting a protected link including:

connecting traffic from a service module to a first pooling switch,

5 connecting the first pooling switch to a first physical module having a link layer framer that is connected to the protected ingress link,

connecting the traffic through the first physical module through a second pooling switch to a second physical module that is connected to an alternate ingress link.

28. A method of protecting a protected link including:

10 connecting traffic from a service module to a first pooling switch,

connecting the first pooling switch to a first physical module having a link layer framer,

connecting the traffic through the first physical module through a second pooling switch to a second physical module that is connected to the protected egress link,

15 connecting the traffic through the first physical module through the second pooling switch to a third physical module that is connected to an alternate egress link.

29. A method of protecting a protected link as in claim 28 wherein the third physical module does not include a link interface module.

30. A method of protecting a protected link as in claim 28 wherein 1:N protection is
20 provided.

31. A method of protecting a protected link including:

connecting traffic from a service module to a first pooling switch,

connecting the first pooling switch to a first physical module having a link layer
framer,

connecting the traffic through the first physical module through a second pooling
switch to a second physical module that is connected to the protected ingress link,

5 connecting the traffic through the first physical module through the second
pooling switch to a third physical module that is connected to an alternate ingress link.

32. A method of protecting a protected link as in claim 31 wherein the third physical
module does not include a link interface module.

33. A method of protecting a protected link as in claim 31 wherein 1:N protection is
10 provided.

34. A device for switching traffic comprising:

A first pooling switch configured to be connected to a physical module,

A link layer frame module connected to the first pooling switch,

A second pooling switch connected to the link layer frame module, and

15 A service module connected to the second pooling switch.